



**2<sup>ND</sup> SEM. 2009/2010**

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**UNIVERSITY OF SWAZILAND  
FINAL EXAMINATION PAPER**

**PROGRAMME:**           **BACHELOR OF SCIENCE IN AGRICULTURAL  
EDUCATION  
BACHELOR OF SCIENCE IN AGRONOMY  
BACHELOR OF SCIENCE IN HORTICULTURE**

**COURSE CODE:**       **CP 205**

**TITLE OF PAPER:**     **CROP PHYSIOLOGY**

**TIME ALLOWED:**       **TWO (2) HOURS**

**INSTRUCTION:**       **ANSWER A TOTAL OF FOUR [4] QUESTIONS. ALL  
QUESTIONS CARRY EQUAL MARKS.**

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED  
BY THE INVIGILATOR.**

**INSTRUCTION: ANSWER A TOTAL OF FOUR [4] QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.**

**QUESTION 1**

**Answer the questions sequentially as arranged below. There will be a penalty for non-sequential arrangement of answers.**

- a. Differentiate between “transpiration” and “evapotranspiration”. (5 marks)
- b. Name the major avenues through which transpiration occurs in crops. (3 marks)
- c. What is the significance of transpiration in agriculture? (8 marks).
- d. Explain the dilemma of terrestrial plants? (4 marks)
- e. What is guttation? (3 marks)
- f. Where in the plant does guttation take place? (2 marks)

**[Total marks for Question 1 = 25 marks]**

**QUESTION 2**

- a. Explain what is meant by “parthenocarpy”. (3 marks)
- b. Name two specific examples of natural parthenocarpy. (2 marks)
- c. Discuss the commercial applications of plant-growth substances in agriculture. (20 marks)

**[Total marks for Question 2 = 25 marks]**

**INSTRUCTION: ANSWER A TOTAL OF FOUR [4] QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.**

**QUESTION 3**

Write short notes on the following terms:

- (a) Light influences on crop plants (5 marks)
- (b) Phytohormones (5 marks)
- (c) Tropic movement (5 marks)
- (d) Nastic movement (5 marks)
- (e) Synergistic activity (5 marks)

**[Total marks for question 3 = 25 marks]**

**QUESTION 4**

Discuss two theories that may be used to explain water movement in crop plants. **(25 marks)**

**[Total marks for question 4 = 25 marks]**

**INSTRUCTION: ANSWER A TOTAL OF FOUR [4] QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.**

**QUESTION 5**

**Answer the questions sequentially as arranged below. There will be a penalty for non-sequential arrangement of answers.**

- a. What do you understand by “an essential nutrient element”? (3 marks)
- b. Explain the essentiality of elements. (3 marks)
- c. Describe a foliar symptom of phosphorus deficiency in maize. (3 marks)
- d. Describe a foliar symptom of nitrogen deficiency in maize. (3 marks)
- e. Describe a foliar symptom of potassium deficiency in maize. (3 marks)
- f. Describe one symptom of calcium deficiency in maize. (3 marks)
- g. Differentiate between a mobile element and an immobile element. (7 marks)

**[Total marks for Question 5 = 25 marks]**